The JOURNAL of GEOGRAPHY

VOLUME XLVII NOVEMBER, 1948 NUMBER 8

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Dr. Strain is Chairman of the Department of Geography, State Teachers College, Slippery Rock, Pennsylvania. He has contributed many articles to the JOURNAL and to other geographic magazines in the field of economic geography. During the summers of 1946 and 1948 he taught at the University of Pittsburgh.

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Mrs. Blouch is a teacher in the Hayes School, Lakewood, Ohio. She is especially interested in travel, and field trips for children and the use of visual aids as substitutes. Articles dealing with this phase of her teaching will appear in future issues of the JOURNAL.

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Mr. Hart is now carrying on graduate work toward a doctorate at Northwestern University.

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VOLUME XLVII NOVEMBER, 1948 NUMBER 8

OIL PRODUCTION IN THE MIDDLE EAST

WARREN STRAIN
State Teachers College, Slippery Rock, Pennsylvania

One of the most coveted parts of the world is the Middle East, which includes part of the land adjacent to the Arabian, Red, Black, Caspian, and eastern Mediterranean seas. Lying as it does across one of the world's major trade routes and at the junction of three continents, this area has a location which has long been recognized as one of great strategic importance. With the development of petroleum resources there, the strategic value has been greatly enhanced, for it is likely that this region has more oil than all the rest of the world combined.[1] As the air age develops, the necessity of having large supplies of petroleum available becomes more and more imperative. Western Europe, an area of great industrial and commercial importance, is especially deficient in reserves of these volatile hydrocarbons; consequently European nations are making desperate attempts to acquire oil concessions in the Middle East as well as in other parts of the world. Even the U.S.S.R., which claimed to have fifty-five per cent of the world's petroleum in 1937, has recently attempted to reach an agreement with Iran to produce oil in the area south of the Caspian Sea. The Russian interest in the Arabian-Palestine controversy may be related to the resources of that part of the earth, since it is now obvious that previous Russian estimates of their own oil reserves were far too high. Recently American companies have begun active participation in the Persian Gulf Region. Thus it may be seen that the strategic location and the huge reserves of vital power, petroleum, combine to make this "Land of Five Seas" a much sought after area.

[1] Recent estimates have placed the oil reserves of the Middle East at between twenty-seven and one hundred billion barrels.

EUROPEAN INTEREST IN MIDDLE EAST OIL

As early as 1882, Admiral Lord Fisher urged that the British fleet be converted from coal to oil as a source of power, stating that it would increase the efficiency of the fleet by fifty per cent. He had five strong arguments which still hold true:[2] (1) Refueling with oil can take place at sea, thus keeping all the fighting ships near or in the zone of activity, while coal refueling must be carried on at a base. It has been estimated that one-third of the coal-powered vessels in every conflict must be away from the scene of battle, getting refueled. (2) Oil gives three knots more speed than does coal when used in the same ship. (3) The engine room personnel can be reduced sixty per cent when oil is used. (4) There is a more rapid deterioration in coal than in petroleum. (5) Since oil is fluid, it can be easily stored in parts of the ship not usable for coal storage. But Britain did not control oil reserves.

At that time most of the petroleum production of the world was confined to the United States and to the Caucasus region of Russia. With the bringing in of a gusher in the Baku District in 1898, Russia forged ahead of the United States, temporarily, to become the world's greatest producer. This caused the British, Dutch, and Germans to view the situation with alarm and they began to look around for areas where they could obtain concessions. The Dutch turned to the East Indies while the others sought privileges in the Middle East, and thus began a period of intense international rivalry. The story of the acquisition of concessions is filled with plots, thrills, intrigue and revolutions.

In Iran the British have a 100,000 square mile concession in the south while the U.S.S.R. desires a similar area in the five northern provinces. The Russian concession was not confirmed so production has not yet begun in the north. Controlling interest in Iraq is held by the British but American, Dutch and French companies bought shares in the producing company. In Saudi Arabia the concessions are held solely by American companies.

OIL PRODUCTION IN IRAN

Altho William Knox D'Arcy, an Australian businessman, obtained his concession in 1901, actual production did not begin until seven years later when a well was drilled at Masjid-i-Sulaiman in

[2] Ludwell Denny, We Fight For Oil. New York. 1930. P. 24.

the Province of Khuzistan (Fig. 1). The exploring party became interested in this area when it found oil springs and asphalt pools at the base of the Asmari Mountains in southern Iran. The asphalt pools resulted from the evaporation of the more volatile materials from the oil springs, and provided an item of commerce at a very early date. It is probable that the basket in which Pharaoh's

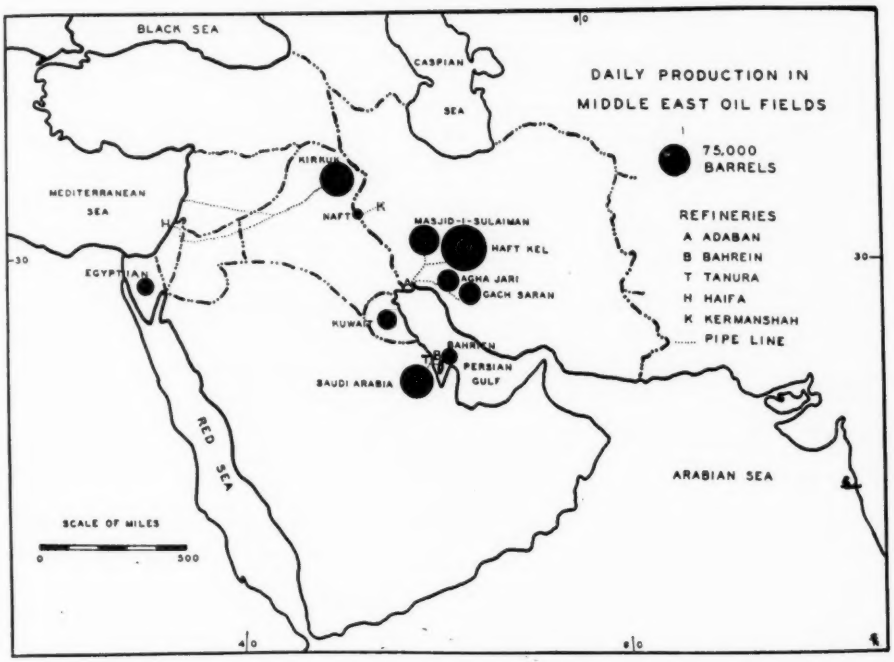

FIG. 1. Daily oil production in 1946 by producing fields. The area of the dot is proportional to the output. The location of the Alwand Refinery is covered by the production dot for the Naft field.

daughter found the infant Moses, was waterproofed with tar from this area.

In looking about for a landmark so the site could be found by the drilling company, the exploring party found the ruins of Masjid-i-Sulaiman Temple (Temple of Solomon) which was built by the Zoroastrians about 200 B.C. The Zoroastrians, it will be recalled, were fire worshipers, inspired by the "Eternal Fires" in the area. It is reasonable to believe that these fires were caused by the ignition of escaping jets of gas associated with the oil domes, and their constant burning gave the impression that the

fires were eternal. Since the drilling of the well at Masjid-i-Sulaiman, production has expanded to four other fields which extend in a northeast-southwest direction (Fig. 1).

The average daily production in Iran is about 400,000 barrels (1947), seventy per cent of which comes from two fields, namely, Haft Kel and Masjid-i-Sulaiman. These two fields have jointly produced over a billion barrels of oil and the wells here are still producing by natural flow, evidence of the great quantity of gas associated with the oil structure. There are fifty-one wells in production in the five fields of Iran and from these comes sixty per cent of the total oil produced in the Middle East.

As is characteristic of most of the petroleum producing areas of this region, the "black gold" is obtained from the Asmari limestone which is about one thousand feet thick capped by an impervious layer of rock known to geologists as the Lower Fars Formation. Asmari limestone is quite dense and has a low porosity, a condition which is not at all conducive to the storage of oil. However, in the folding process, faults and fissures have resulted and it is from these cavities and breaks that the petroleum is taken. Where fissures do not exist, commercial production is impossible. There is striking uniformity in the size of the domes, each covering about sixty square miles.

A large refinery, located on Abadan Island in the delta of the Tigris-Euphrates and about one hundred fifty miles from the producing fields, handles most of the crude coming from the four eastern fields. There are, however, topping plants at Agha Jari, Gach Saram and Masjid-i-Sulaiman. The petroleum is transported by pipe line to Abadan and from there the refined products are exported thru the Persian Gulf. Like all the refineries in the Middle East, Abadan does not manufacture lubricating oils altho gasoline and asphalt are produced in large quantities.

The crude produced in the Naft Kjanek and Naft-i-Shah fields (Naft on Fig. 1), located on the Iran-Iraq boundary, is taken to the small refineries at Kermanshal, Iran and Alwand, Iraq. These refineries serve the local market for the two countries and are of greater importance locally than is indicated by the volume of their output.

IRAQ PRODUCTION

In northern Iraq and extending in a northeast-southwest direction for a distance of about sixty-five miles, is the great Kirkuk

anticline from which is produced almost the entire output of Iraq. From the map it appears to be a part of the same anticlinal structure which supplies the oil for Iran but the exact relationship is not known. The importance of this great anticline was recognized immediately upon its discovery in 1927. However, production was held up until some adequate method of transportation for the oil could be provided.

Since most of the petroleum was to be taken to western Europe, it was decided to build pipe lines to the Mediterranean. Twenty years ago this was a very great undertaking and accounts of the enterprise at that time suggested serious doubts as to its practicability. There were many new and trying problems which had to be solved. The route to be followed was from Kirkuk to Haditha where the line forked, one branch going to Tripoli in Syria and the other going to Haifa in Palestine. This made a pipe line almost 1,200 miles long, since Haifa is 621 miles and Tripoli is 523 from Kirkuk. Much of the route is thru a desert and the very great diurnal range in temperatures led to excessive expansion and contraction, a condition which caused the pipes to break. To overcome this, the pipes had to be buried but this meant the struggling with shifting sand or the blasting of solid rock. A second problem then arose. Because of the light rainfall the soil has a high salt content which led to very rapid corrosion of the steel tubes and necessitated having them wrapped in asbestos. Late in 1934 the line was completed but the troubles were not over, for hostile Arab tribes immediately began to sabotage the enterprise by shooting holes into the line and then setting fire to the spouting oil. Constant patrolling has eventually reduced to a minimum this source of trouble.

Production in Kirkuk has consistently been around 80,000 to 90,000 barrels daily, this quantity being limited by the capacity of the transmission line. With the addition of two new sixteen-inch pipes, which it is hoped will be in operation by the close of 1948 or early in 1949, production will probably jump to 300,000 barrels per day.

As in the case of Iran, the Kirkuk field is composed of folded and faulted limestone with large fissures which provide a free interconnection between the wells and which permit the uniform draining of the producing structure from a few outlets. Actually, ten wells located at the eastern end of the field in an area of eight

square miles are providing the present output. It is planned to expand production to twenty more wells located over an area of eleven square miles when the new pipe line is completed. The Kirkuk anticline is sixty-five miles long and from two and one-half to three miles wide, thus providing much virgin territory for future expansion.

There is a relatively high sulphur content in the crude, a condition which presents problems in the refining process. Recently a plant was constructed at Kirkuk to remove part of the sulphur before it is transported thru the pipe line. A refinery was built at Haifa in 1940 and an American company is now considering the possibility of erecting one at Tripoli.

In 1938 a subsidiary of the Iraq Petroleum Company obtained a concession to produce oil west of the Tigris River, about thirty miles south of Mosul, for the next seventy-five years. However, to date, neither has there been any commercial production in this area, nor is there much prospect for a large output in the future.

Kuwait

Near the mouth of the Tigris and Euphrates is the Kuwait Sheikdom, an independent country about the size of the State of Connecticut. The entire country is a desert and most of the people live in the old historic seaport of Kuwait, altho a few nomadic herders carry on grazing in the surrounding dry lands. Shortage of water is a major handicap, the domestic supply for the port of Kuwait having to be imported chiefly by means of sail boats. In spite of the scarcity of water, which is essential in drilling for petroleum, eight oil wells were drilled just before World War II, yielding a current production of about 30,000 barrels daily.

Bahrein Island

Lying about midway between the mainland of Saudi Arabia and the Qatar Peninsula on the western side of the Persian Gulf is Bahrein Island, a dagger-shaped piece of land about thirty miles long and ten miles wide (Fig. 2). Geologically the island is quite simple, with an anticlinical ridge extending in a north-south direction and forming a dome near the center. In 1932 when an American company completed an exploration well it was soon realized that a major field had been discovered. This field is about seven and one half miles long and two and one half miles wide, the oil

being found in limestone at a depth of 1,800 to 2,200 feet. Already seventy-four wells have been drilled and no dry holes have been encountered. In 1936 a well was drilled to greater depths but while more oil was found, there was a preponderance of gas. Petroleum production now reaches 20,000 barrels daily.

Before the discovery of oil, Bahrein was important only for pearl fisheries, dates and a little trading. Except for small sections, the island consists of desert country with high temperatures and a high humidity thruout the summer and fall months. During the

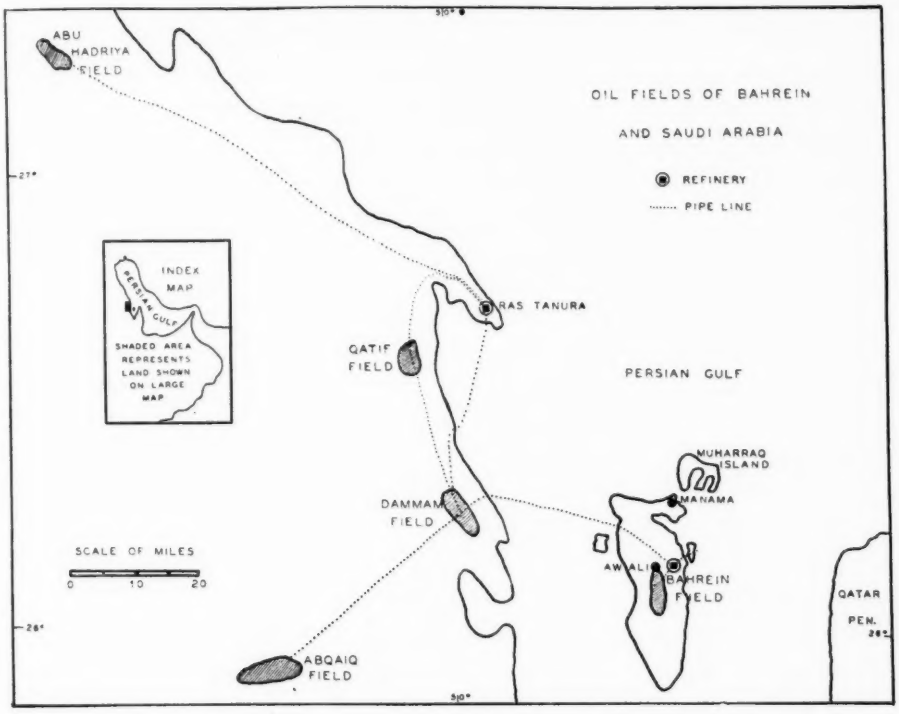

FIG. 2. Oil producing fields in Bahrein and Saudi Arabia.

winter, sensible temperatures are relatively low, consequently houses without heat are uncomfortable. The chief town and seaport is Manama, located on the northeast corner of the island. Due to the shallow water just off shore, tankers must dock about three miles out to be loaded by lighters. With the development of the oil resources, new wharves are being built so that direct loading on to the ships will be possible.

About eighteen miles south of Manama is the company town of

Awali which was built "from scratch" with the development of the oil fields. There are one hundred forty houses for married members of the staff, bachelor quarters, a club, restaurant, laundry, ice plant, office buildings and other conveniences of a modern city. There are three central air conditioning plants which serve every building in the city. During the winter hot water is circulated thru the air conditioning pipes to heat the homes.

Three miles from Awali is the refinery which not only processes the crude from Bahrein but also handles 50,000 barrels daily from Saudi Arabia. Altho well water is used in the boilers, sea water is used for cooling operations. The company also operates a steel-drum manufacturing plant with a capacity of 50,000 drums per month. These containers are used for shipping products from the refinery. An airport which has recently been built on the small island of Muharraq (just northeast of the city of Manama) is connected with Bahrein Island by means of a causeway.

SAUDI ARABIA

The first concession granted in Saudi Arabia was obtained by an American company in 1933. This concession was vast in extent, equalling about one-fifth the area of the United States. Five years later a well was completed to a depth of 4,727 feet, and in 1945 it was still flowing at the rate of 2,500 barrels daily. Since that first successful well was drilled, twenty-three more have been put down in the same field, the Dammam, which contains about twenty square miles (Fig. 2).

In addition to the Dammam, three other producing areas have been discovered—viz, the Aba Hadriya, the Abqaig, and the Qatif (Fig. 2). When Aba Hadriya was discovered in 1940, a well had to be drilled to a depth of almost two miles. The largest field yet to be discovered in Saudi Arabia is the Abqaig which came into production in 1941. Crude from all of these pools will be shipped by pipe line to two refineries—the one at Ras Tanura and the one on Bahrein Island. In view of the fact that the Qatif was the last field to be discovered, it is too early yet to determine just how productive it may be.

The Arabian-American Oil Company, commonly called Aramco, has done almost everything to gain the good will of the Arabs. For instance, all employees observe Friday, the Moslem Sabbath, as a day of rest, and all Arabs are given time off three times each day

to pray and bow towards Mecca. Even bells are prohibited on the company's schools, since Moslems associate bells with Christian churches. Furthermore, water wells have been drilled in the desert and charged to good will. It is probable that great changes will appear in Saudi Arabia as the traditionally poor nation receives royalties from the oil resources.

Egypt

Any account of oil in the Middle East would be incomplete without some mention of recent developments in the "Land of the Nile." In 1946 Egypt consumed 6,300,000 barrels of oil more than it produced, a fact which has spurred the government to encourage a larger local production. Exploration has been hampered by the presence of land mines laid during the recent war and which, due to the dry atmosphere, almost never deteriorate.

The only commercial production of petroleum in Egypt is on the western side of the Red Sea, near the Gulf of Suez, where about sixty per cent of the local requirement is produced. Indications are very favorable for finding oil on the western side of Sinai, about forty miles south of Suez.

Early in 1946 attempts were made to discover oil west of the Nile when a well was drilled at Abu Roash, ten miles west of Cairo. This attempt resulted in a dry hole and the well was abandoned after granite had been reached.

Summary

Oil production in Iran accounts for sixty per cent of the present petroleum output in the Middle East and is confined to the southern part of the country. Within a few years oil will probably be produced in the five northern provinces of Iran and this will undoubtedly greatly increase the total production of the country. With the completion of the new pipe line from Iraq, production in the Kirkuk region will be greatly augmented. With increased output by American companies in Saudi Arabia, it is likely that the Middle East will forge ahead to become the world's leading area in petroleum production.

CITY STUDY IN THE UPPER ELEMENTARY GRADES

ADELAIDE BLOUCH
Hayes School, Lakewood, Ohio

Cities, with their rattle of traffic, smoke of industry, and crowds of shoppers, are the homes of many of our pupils. We try to lead our elementary geography classes to see that the city is an outgrowth of the region, dependent upon it and also giving services to it. To do this, we have tied together the work of the city and the production of the surrounding area.

By a study of the structure of a particular city, thru observation of its site and zonal characteristics, can we make the functions which it performs so meaningful that a city will not be merely a dot on a map, a particular location, or a name associated with a certain type of work? Can we make our pupils eager to investigate the patterns of cities other than our own, and to see them as groups of people, living and working together, like our city, and yet unlike it in some ways? Can we give them the desire to find reasons for these likenesses and differences?

Our pupils are traveling during vacation periods and their trips usually have as destinations, cities about which they have studied or will study. If the idea of a city pattern has become a part of the children's thinking, the visits, however brief they may be, will make the geography study functional.

To secure these understandings and attitudes, it is not necessary to introduce investigations which are complex and unsuited to the children's abilities and attainments. From their studies in earlier grades, pupils recognize certain functions of the city, such as wholesale and retail handling of food products, means of transportation, residences of various types, buildings such as the department stores, banks, hotels, post office, fire departments, and other forms. Important industries and the shipping of raw materials and finished products to and from the area may or may not have been studied but we need not avoid them in discussing the forms of our city, as they are probably familiar sights.

By use of a simple diagram the pupils are led to place the heart or principal business section of the city of Cleveland, industrial areas, poorer and better residential districts, with relation to each other, and to find reasons for this placement. The class is shown that while our suburb, Lakewood, is an independent municipality,

it is really a part of the large nearby city. New words necessary for this city study are listed and carefully explained. We take advantage of every item of available supplementary reading material and pictures which would help to clarify this concept of a city pattern.

To orient the class in the city study, a large air view of the principal business section of their city is shown or a post card view of this section is presented in an opaque projector. The children point out places which they recognize. They call this part of the city "down town" and can give a number of reasons for going there, such as shopping, theater, baseball games at the stadium, banking, doctors, the train terminal, as well as work employing members of their families. They suggest means of transportation and routes by which they get to the heart of the city. Some pupils provide themselves with maps of the city. By using a map in the opaque projector we can follow several routes to the down town section and recall what we would see on our way.

It is well at this point to take a trip thru our city by bus, if this is possible, to relate to the actual landscape, the points which have been discussed. Guide sheets call attention to natural and cultural features which should be observed, and the route is marked on a simple map. The trip takes us from a residential area in the suburb to the core of the city and returns by another route to the suburb in which we live.

Our Trip

Passing thru the residential area at the western edge of Cleveland we approach the waterfront. Here our route carries us thru Edgewater Park along Lake Erie, with spaces for concerts, games, bathing, picnicking and fishing. The shore drive passes the yacht basin where privately-owned boats are harbored. We also see a sewage disposal plant which serves this westerly section.

To the south of the drive and parallel to it for a considerable distance, is the New York Central Railroad whose route takes advantage of the lowland provided by the lake plain.

Our route takes us, as we get closer to the center of the city, from the low, filled-in land along the lake to the ridge left by an older lake bed. To our left lies an old mouth of the Cuyahoga River and on the "island" formed between it and Lake Erie the land is largely owned by the Pennsylvania Railroad and given over to shipping. An outer harbor is provided by a breakwater wall extending several miles to the west of the present river mouth and also to the eastward. In the western section, ore is unloaded and placed in railroad cars or storage piles for trans-shipment to inland iron and steel centers. Unloading of ore and other bulky products is also done in a part of the inner harbor provided by the old river mouth. We can see in the distance to the eastward, the coal-loading machinery and near it the Public Stadium in a second water front recreational area.

To the south of the highway our route follows a main artery to the heart of the city, Detroit Avenue, one of the earliest roads used by travel to the westerly lake settlements because it could take advantage of the ridge of the old lake bed.

We see the pumping station and filtration plant, advantageously situated to take water from far out in the lake thru tunnels, and send it to the west side of Cleveland and westerly suburbs.

On this part of our trip we see stores and manufacturing plants and also sections of poorer housing. Here is also a government housing project, at the edge of the river valley and on land provided by slum clearance. At the edges of this area and here and there among the manufacturing concerns there are some poor houses.

The shore way route takes us to a high level bridge crossing the broad valley of the Cuyahoga River and into the commercial heart of the city. There are many sights to be seen if we could stop on the bridge. However, from our bus windows we can see other high level bridges, several types of low level bridges, railroads which follow this lowland route to the center of the city, a grain elevator and flour mill, cement elevators, and other manufacturing plants.

In the business section we note many tall buildings, including the Terminal Tower, Cleveland Hotel, Telephone Building, Post Office, department stores, office buildings and banks. There are several kinds of public transportation focusing at the center of the city. We might stop and go up to the Terminal Tower because from its Observation Floor we can view the landscape in all directions or a considerable distance on a clear day, pointing out main arteries of travel and certain familiar and unfamiliar landmarks.

Leaving this vantage point we resume our trip. Our route takes us south along Ontario Street, passing Central Market, to a ramp leading into the Flats. This is largely an industrial area, taking advantage of the inner harbor for receipt of bulky materials, flat land affording space for storage piles, manufacturing establishments and railroads, one of which uses space formerly occupied by the old canal. We pause at the foot of the ramp to view the Terminal and railroads leading into it, the various types of bridges, the fire boat and river traffic.

Passing along the valley to the southward (or upstream) we enter a road which follows a tributary valley, Train Avenue in Walworth Run. This road, as its name indicates, parallels a railroad. It is easy for the pupils to see why this is a good location for a railroad, and the industries which are situated along it. The stockyard and a number of meat packing plants are concentrated near the point where Train Avenue emerges into Clark Avenue.

Many of the homes located on the rim of this industrial area are quite poor, particularly at points closest to the heart of the city. Farther along the route there are side streets of better residences altho quite old. Continuing westward along Clark Avenue and Lorain Street we pass into a better residential area.

Our route also takes us along main arteries where are located local shopping districts, theaters, banks, churches and other service and social centers.

Eventually we reach the outskirts of the city and into neighborhoods where the housing is much better than that closer to the heart of the city. In the outlying district there are some manufacturing plants, and business firms such as ice and fuel companies, lumber yards, and bakeries which service that section of the city. Our suburb is largely a residential area, however.

So in our trip we see many kinds of land use and sections of all zones.

A set of colored film slides are ready to use as a substitute when a trip is not possible or they may be used in the discussion

period following the trip. Another use of such material is in testing.

In summarizing our investigation of Cleveland we encircle on our large map the area which is approximately the heart or principal business section, lying east of the river and somewhat back from the lake. Another circle, roughly enclosing the industrial area, starts at the lake shore on the west near the location of the ore docks, swings around the core of the city, widening on the eastward side and again ending at the lake line. This fan-shaped pattern is repeated in a third zone which extends approximately to the city limits and an outer circle which encloses the suburban areas.

Adopting a color key to show the business, industrial, residential and recreational sections and railroads we attempt an air view interpretation of land uses as we found them. As a first attempt, pupils work in pairs or small groups on the blackboard or large sheets of paper. Individual air views are then tried, using crayons and manila paper.

When we are ready for the study of another city, a large map of the urban area is placed before the class. Water is shown in blue and clear dotted lines indicate city limits. Each child uses a small file card on which to sketch the shape of the city being studied, the back of the card being used for recording data such as location, latitude, elevation, population and outstanding facts about work. The class may find it interesting and helpful to know some of the history of a city—facts which account for its early settlement and rapid growth at certain periods. Individual reference work and reports may be used for this.

If an air view of the city is available, we examine it to find the location of familiar forms—docks, railroads, industrial plants, tall buildings, parks and probable residential areas. Using the same color key as before we attempt air view interpretations of land uses.

The children of two classes were enthusiastic about communicating with classes in other cities to request information about the location of the chief business district, the industrial and the residential sections. We received a number of city maps, both printed and hand drawn, pictures, and post cards as well as interesting letters about the leading kinds of work. In exchange we sent maps, postcards, literature, and letters describing Cleveland.

Each child places the file cards which he makes in an envelope and keeps his air view interpretations in a notebook.

Of course we can not find time to do all of these exercises as a class on every city studied, but we go back to it with sufficient frequency so that after the techniques have become somewhat familiar routine the class can work as groups or committees, as they like to be called: one group gathering data from reference sources; a second finding information and pictures about industries; a third group making file card maps; and a fourth group trying land use interpretations from air views. There are always a few outstanding individuals who are eager to go ahead independently doing more than the assigned problem.

Tests used following the study of regions of the United States include a set of city outlines cut out of colored paper and mounted on bogus paper, and a set of descriptive paragraphs, each item to be matched with the name of a city.

As in other types of laboratory exercises, individual attainments vary greatly with interest and ability but checks of the results and recognition of effort bring satisfaction in personal and group achievements. The success of the exercise in a large measure depends upon the background which the class has and the manner of presentation, which must be adjusted to the particular group.

The entire activity might be criticized as "too heavy" for elementary classes but in attempting to delete or simplify the material, it would be difficult to pick out specific understandings and abilities which are not desired in our curriculum, and on this level of geographic experience as checked with published lists and textbooks. Among the abilities and habits which we try to develop are:

1. Ability to identify various combinations of work and natural environment with specific locations.
2. Ability to associate density of population with types of work related to natural environmental factors.
3. Ability to recognize certain large cities from descriptions of the uses man makes of their natural settings.
4. Ability to locate the large cities of the United States on an outline map in the correct states and on the correct waterways.
5. Ability to read maps showing street patterns of cities, highway patterns, and railway patterns.
6. Ability to read such relations from maps as road pattern related to surface, street pattern of a city as related to topography and waterways, and railroad pattern as related to topography.
7. Ability to identify in the landscape and in pictures certain types of manufacturing forms.

8. Ability to use certain terms:

parallel	commercial	outer harbor
ridge	residential	inner harbor
zone	industrial	tributary
route	break wall	valley

9. Realization of the study which the highway engineer or railroad builder made of the surface of the land when selecting the particular route for a road.
10. Habit of consulting maps immediately when reading about a new place.
11. Habit of observing carefully the everyday activities one sees about him.
12. Habit of thinking in terms of geographic understandings concerning many of the everyday activities that one sees about him.

To the above list may be added the enjoyment of relating our everyday, out of school experiences to our school activities—in other words, making our geography study functional.

A NEW MAP OF TUNG PRODUCTION IN SOUTHEASTERN UNITED STATES

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Tung oil, which is used industrially as a drying agent in paints and varnishes or as a waterproofing agent, was not produced in significant amounts in the United States until World War II. Before 1939, China was our leading source of supply of the oil, which is extracted from the nut of the tung tree, despite the fact that the tree was first introduced into the southeastern United States as early as 1905. Recent production of tung oil in the United States is concentrated in the Tung Belt, which includes all areas producing tung nuts in 1945. Only those areas producing over 100 tons are indicated by the appropriate dot symbols.

The Tung Belt of southeastern United States delimits the area in which tung nuts are produced. (See map.) It extends in a narrow westerly direction from southern Georgia and northern Florida into east central Texas. The major concentration of tung nut production is in southern Mississippi and northeast central Louisiana, near Bogalusa, Louisiana. Other minor concentrations are the Capps area of northern Florida, and the Gainesville area of north central Florida. The Bogalusa area produces about sixty-four per cent of the tung nuts of the United States States. Twelve per cent are produced in the Capps area, and only six per cent in the Gaines-

ville area. Other producing areas are scattered thruout the Tung Belt.

Conditions of temperature and precipitation set the general limits of the Tung Belt. The requirement of the tung tree for a well-defined three month dormant season (at least five hundred hours of temperatures of 45°F or lower each year) sets the southern limit. Freezing temperatures soon after the tree drops its fruit are desirable, to prevent the appearance of buds which would be

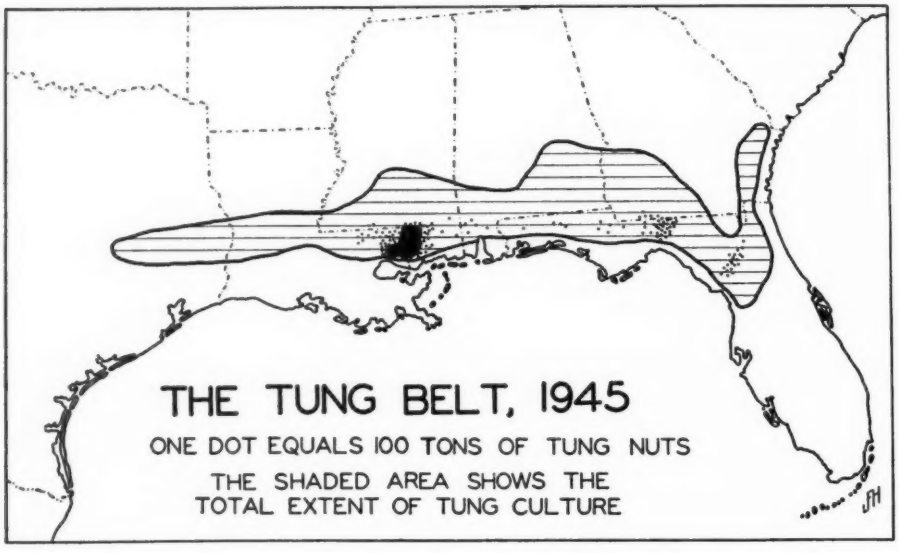

FIG. 1. The Tung Belt of southeastern United States, 1945. Source: U. S. Census of Agriculture, 1945.

subsequently damaged by frosts. The Gainesville area in north central Florida has been consistently troubled by this tendency of the tree to bud before the first winter frosts.

The factors setting the northern limit of tung nut production are not too well known. However, severe winter temperatures or late spring frosts prove damaging to the tree, so most successful plantings are located near the Gulf of Mexico. The general western limit is set by precipitation. Forty inches of annual precipitation are desirable, and there have been no successful plantations in areas with less than this amount.

Other factors affect the growth of the tree within the Tung Belt. Adequate drainage, both air and soil, is mandatory. The tree produces best on slightly acid soils, preferably fertile sandy loams.

Most tung orchards are still in the experimental stages. For this reason, until further progress is made, the tree will not be planted in areas which might be better suited to its production.

WINGS OVER THE ATLANTIC—THE TIME-PLACE FACTOR IN GEOGRAPHY

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On the hazy afternoon of June 3, 1947, in showery weather, my wife and I arrived at La Guardia airport an hour before flying time. Lowering thunder clouds on a near horizon growled dissatisfaction at the invasion of their realm by giant beetles with spread wings, for that is what scores of airplanes looked like, parked at various angles at irregular intervals across the great flat reclaimed not many years ago from East River. Some of them were standing in mud puddles.

Several DC 4s were conspicuous because of their alignment, drawn up along a ramp, waiting turns to be serviced by oil trucks standing by. While one of them turned around slowly with one wheel on a little turntable, another started to move to a new position towed by a tiny tractor. A DC 3 in the vicinity was warming up, and another one nearby was inspected by a mechanic who drove up in a maintenance truck. A third moved along a distant runway preparing to take off. DC 3s have been for many years standard planes, work horses of the air, in the service of all the commercial lines. Planes were visible in the air nearly all the time, circling and then heading landward, oceanward, or down to earth.

We entered the International Terminal, a rotunda with a huge globe in the center. At desks between marble pillars passengers were checking in or making enquiries. Some of them admired the mural decorations, imaginary scenes associated with air transport. People walked over to the bulletin board showing, "Departures and Arrivals," looked at it a moment and strolled off. At short, irregular intervals, a loud speaker paged passengers, asking them to report at a designated desk or office.

Signs above the desks indicated the international aspect of air travel. One of them read, "Speed Boat Service: B O A C," that is the British Overseas Airways Corporation; *Linea Aero-*

postal Venezolana represented one of Latin America's lines; "Air France" was there for the continent of Europe. AOA, American Overseas Airlines, T W A, Trans-World Airlines, and Pan American reflected the great interest of people of the United States in trans-Atlantic travel.

Our baggage, tagged and weighed, was taken on board while we sat in the waiting room. As the door to the ramp opened, an attractive stewardess asked the assembled group to follow her.

Fig. 1. North Brother Island. Bronx-Whitestone Toll Bridge in the distance. (Photo by J. W. Coulter)

It was with something of a thrill that I took a seat in the "Clipper Eclipse" for my first over-seas flight. As the door of the cabin was drawn across the opening and pushed securely into place, the whirr of the propeller and the responding vibration of the plane indicated everything was ready for the start. At four-fifteen, New York daylight saving time, we moved away, very slowly at first.

As the great machine taxied along the ramp, a bright sun appeared, casting shadows of the wings beneath us. While we stopped a few seconds before entering the runway, a silvery glint in the sky marked the silhouette of a plane coming in. The engines suddenly speeded with a roar, shaking the cabin with vibrations, while the wind from the propeller blades waved the nearby grass vigorously. Just outside my window the wing flaps rolled slowly out with a distinct hum. The landscape whizzed past and I could

not tell just at what moment the wheels left the runway. As we gained altitude quickly, big factories along the river began to look very small, and North Brother Island with its tall structures appeared away below us like a miniature. In only a few minutes from the take-off we were heading northwards above a bank of fleecy, cumulus clouds.

Speeding thru the air at 250 miles per hour, the sensation was little different from that on a railway car, except that ear drums popped now and then with decreased pressure due to increase in altitude. The cabin was pressurized for "normal height," 8,000 feet. At 17,000 feet we were higher than cirro-cumulus and cirro-stratus clouds and only the great blue vault of space was above us. Moisture condensed on the inner glass of the double window, for it was now very cold outside. A great glare of bright sunlight reflected from the clouds, made dark glasses comfortable and now and then thru breaks to the east we obtained glimpses of the New England coast and the ocean beyond.

The Atlantic

It seemed only a little later when we were over the Bay of Fundy with the white cliffs of the west coast of Nova Scotia on our right. Down below us the ocean appeared a dim blue.

By six o'clock in the evening (N.Y. d.s.t.) the sun was below the clouds, and the somber shades of evening surrounded us. As the going became bumpy and the wing tips tilted up and down, an electric sign in front read, "Fasten your seat belts."

As we were finishing dinner a forward tilt of the plane indicated we were decreasing altitude. A lighthouse flashed in the distance and we could discern a stretch of dark green water in the twilight of northern Newfoundland. The lights of a runway raced towards us and the wheels gently but firmly pressed hard on the terra firma of Gander Field at eight-nineteen o'clock.

The weather was cool in Gander with gusts of cold wind sweeping between the hangars. In the dusk we saw little of the airport, opened in 1938 for regular trans-Atlantic service. Activities seemed concentrated on our airplane. Gasoline was pumped into the tanks from two trucks one under each wing, and an oil truck contributed its quota for lubricant. Members of a ground crew unscrewed the floors of the engine casings and poked their heads inside to inspect; a pilot walked about on top with a flashlight.

We went into the large waiting room to look at Indian rugs, shoes, mittens and other artifacts on exhibit.

When we took off again at nine-twenty-seven, the stewardess announced that the estimated flying time to Shannon Air Port was six hours and twenty minutes. A full moon behind the clouds cast a pale glimmer in which the starboard wing of the clipper appeared as a great black specter sailing thru the night. When we

FIG. 2. Airport, Gander, Newfoundland. Clipper taxiing to runway for takeoff. Courtesy, Pan American Airways.

climbed higher, the moon's full brilliance was reflected from the fuselage and its double was cast in the tops of the clouds below. The lights in the cabin were dimmed, passengers tilted their chairs to reclining positions, and the only sound was the continuous whirr of propellers.

My thoughts turned on the medium of transportation which seemed to annihilate time and space. I first crossed the Atlantic

Ocean in the *Lusitania* in six days and now the same journey was being accomplished in less than twelve hours by my watch, keeping New York time until we reached our destination. Our Lockheed Constellation was ninety-five feet long, had a wingspread of one hundred-twenty-three feet and weighed forty-five tons. The cabin, painted grey, had forty-two low seats, arranged in pairs on

FIG. 3. Cirrus and strato-cumulus cloud formations photographed from Clipper over the North Atlantic. Note the little streamers at the wing tip for dissipating static electricity. Courtesy, Pan American Airways.

each side of the aisle, all covered with antimacassars. On racks below the curved roof were hats, small bags, pillows and blankets. The rows of windows along each side looked exactly like port holes.

The route mileage from New York to Gander, along a series of chords to the great circle was 1,020 nautical miles (1174.5 statute) and from Gander to Shannon 1,716 (1,976 statute), a total of 2,736 nautical or 3,150 statute miles. Latitudes and longitudes from the *Times Atlas* are: New York 40° 43′ N, 74° 1′ W; Gander 49° 20′ N, 54° 25′ W; Shannon 52° 41′ N, 8° 58′ W. The great circle

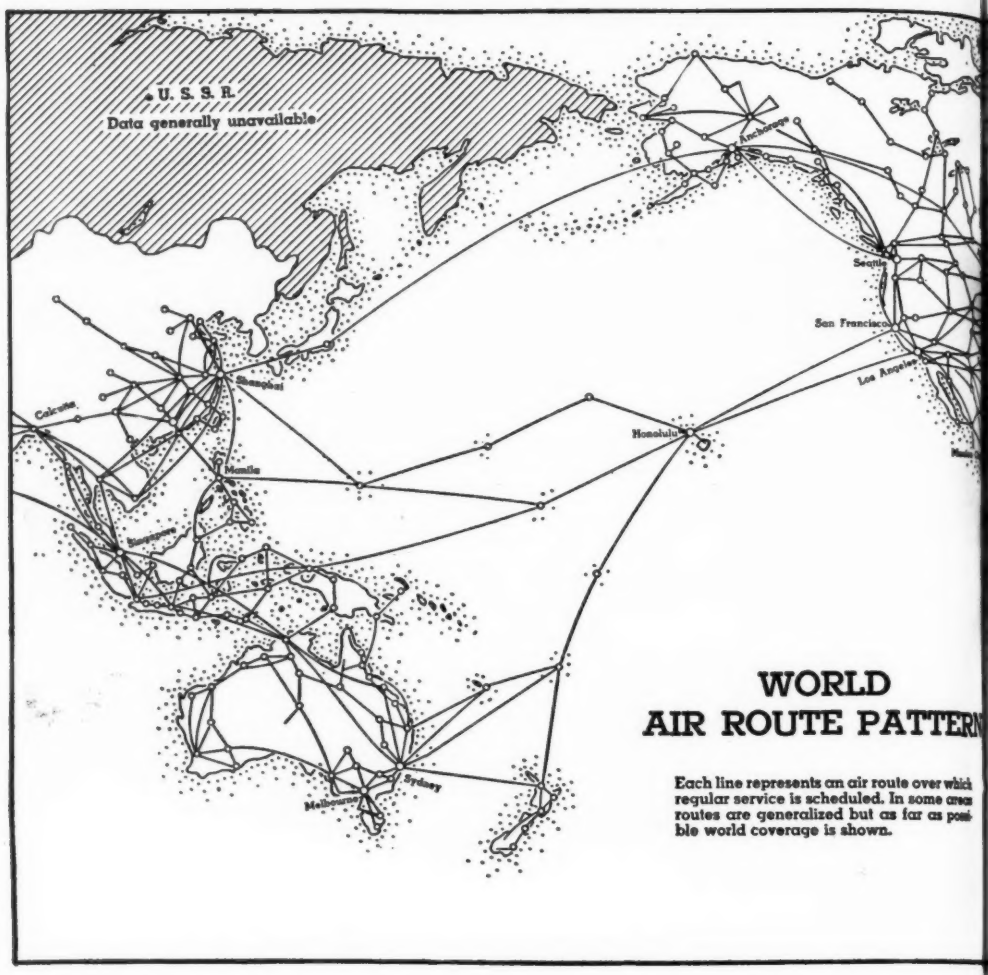
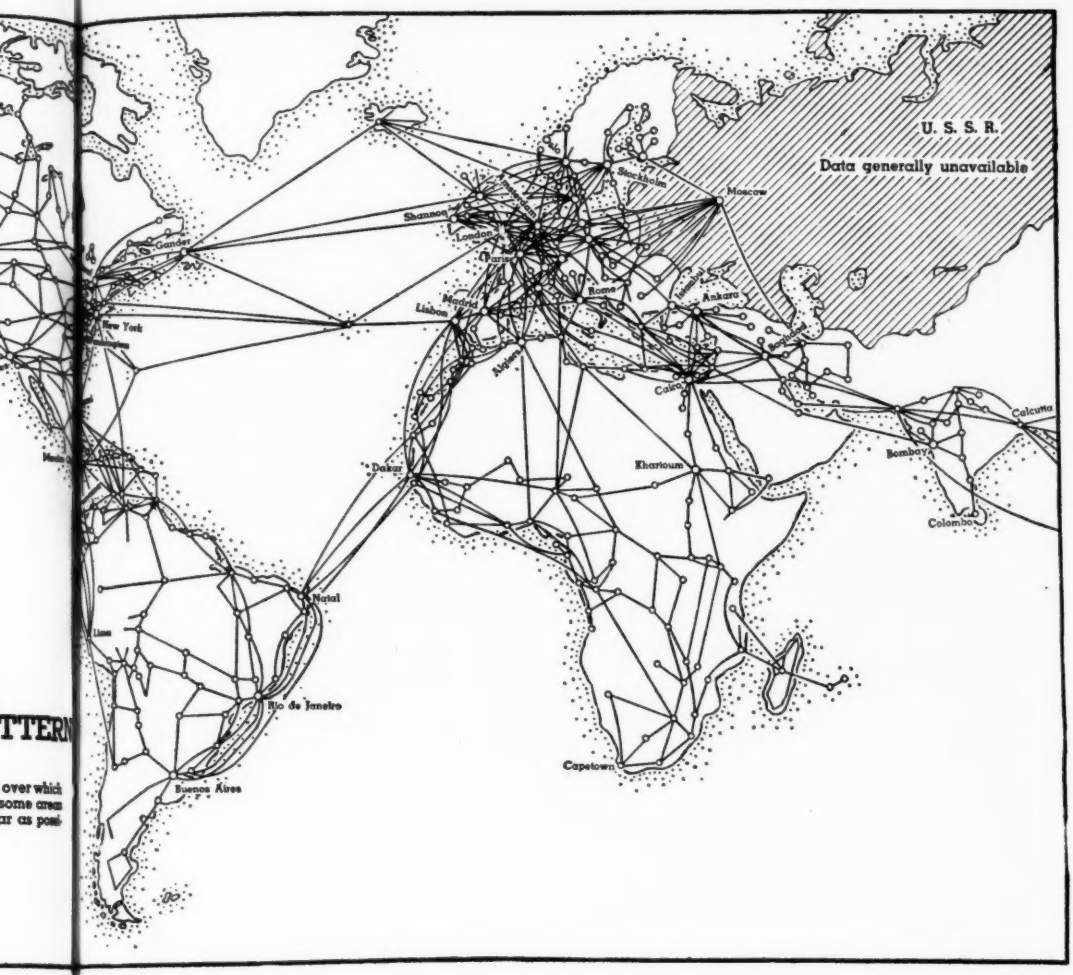


Fig. 4. The accompanying map shows world air routes in July, 1947. For lines where schedules for that month were unobtainable, the latest data available were used.

On this map it is impossible to show itineraries exactly, and to distinguish between airlines. For the United States and western Europe only trunk lines are plotted, and they are generalized. Where two or more lines coincide, one line on the map represents all of them.

Except for ice-bound Antarctica, every continent has an impressive network. The Pacific and the Atlantic oceans are spanned in several places, and the Caribbean, Mediterranean, and Java seas are crisscrossed by routes. Note that a line follows the valley of the Amazon, reaching almost all the way across that part of South America; the Sahara is crossed in five places; and air lines penetrate the interior of China much farther than railroads.



Commercial airplanes do not fly over the North Pole, the shortest distance between places in North America and Eurasia. Some air age enthusiasts predicted that in the postwar world we would see them take off from San Francisco, Kansas City, Chicago, and New York to fly over the Arctic to Stockholm, Rome, Moscow, Istanbul, Bombay and Chungking. Altho saving great distances, commercial flying that way will be in the distant future; for air lines, like railways, do business with big cities and dense populations. A carrier from New York to Bombay would not operate profitably flying over the Pole and making its destination the only stop. However, if it takes passengers or freight or both between New York, Paris, Rome, Cairo, Dhahran in Arabia and Bombay, the line will pay. It will probably be a long time before intercontinental passengers can look down at the North Pole on their way from one hemisphere to another. (Courtesy, G. Etzel Pearcy)

mileage New York to Gander is 974 nautical miles, and Gander to Shannon 1,699 nautical miles.

I preferred not to sleep, and at one in the morning I saw a grey dawn begin to spread over the sky ahead. The port side of the clipper was soon tinted with golden rays for we were now trending southwards, and the moon disappeared low down away behind. The floor of clouds was thin and broken and far below I could see the great ocean. The wing of the plane was covered thinly with ice and there was hoar frost on the inside rim of the window. Several tiny streamers near the wing tip, like pieces of tape, which fluttered in the wind the evening before, were now frozen stiff. The purser told us we were at an altitude of 19,000 feet.

By breakfast time much of the cloud floor had disappeared, but we were still high above what remained. As we came nearer the coast of Ireland, a light land breeze piled up strato-cumulus with scattered puffy cumulus tops like white mountains. Our first glimpse of land was a low peninsula partly obscured by broken clouds. Little white houses appeared in a patchwork landscape of various shades of green with bits of black peat land here and there, all crossed by streaks of roads. The estuary of the Shannon loomed large as we came down to circle the landing field and stop at three-forty-five by my watch, eight-forty-five local Irish time (daylight saving). The total flying time from New York was ten hours and twenty-two minutes.

TIME-PLACE RELATIONSHIPS

The speed with which the Atlantic Ocean and other areas in the world are now traversed by men and goods has reemphasized for geography the factor of relativity in time-place relationships. That factor became important when man could sail a boat instead of piloting a log, and again when trains and automobiles superseded oxen and horses. It came to the fore the last time on December 17, 1903 at Kitty Hawk, North Carolina, when Orville Wright made the first airplane flight in history.

Aircraft differ from other forms of transportation in that they can travel equally well over both land and sea. Columbus' ships could visit any port where modern steamers berth, but neither could travel over land. The mule train can go places to which the streamlined train can go, but neither can travel over the ocean.

Land travel by airplane is more important in countries of

great area like the United States and Russia than in small states like those of western Europe. Hauling freight by air has been one of the faster-growing businesses in the United States, where some aspects of aviation have been more highly developed than in any other country in the world. Some strato-freighters, carrying

FIG. 5. View of Irish terrain taken from Clipper. Courtesy, Pan American Airways.

twenty-ton pay loads, fly 1,550 miles at cruising speeds of 290 miles per hour. The Government of the United States recognized the importance of air transport when, in May 1946, the 79th Congress passed the Federal Airport Act which authorizes annual appropriations for the construction or improvement of public airports amounting in the aggregate to $500,000,000.

There are no great distances within the limits of the majority of European countries; hence no especial need domestically for such speed as the airplane alone can provide. On the other hand the English Channel, the North Sea and the mountain ranges of south-

ern Europe penalize the surface carrier more heavily than the air line, and the political barriers of international frontiers generally offer greater delays to surface traffic than to air transport. The fact that in Europe few important airlines could be established within the confines of a single nation made impracticable any continent wide program of airway lighting or uniform aids to aerial navigation. As a consequence, few air routes in Europe were flown at night until a short time before World War Two began, in 1939, and even at that time the large majority of European airline operations were still on a daytime basis.

In the United States, where time in transit is measured not so much in terms of absolute hours as in business hours, air transportation has faced severe competition from land transportation. Air line traffic has been developed almost entirely at the expense of surface transportation. An important phase of future operations is the development of air-rail service whereby air lines and railroads may work together in a co-ordinated system. In both the United States and Europe railroads have accepted in principle the idea that the faster vehicle might be of the greatest value in reducing operating costs, not as a competitor but as a supplementary carrier. If the railroads could succeed in removing from their rights-of-way all fast trains, no small part of the maintenance costs would be eliminated because fast traffic requires much more repair, supervision and greater safeguards. If the railways and existing air lines could join, rearranging schedules, locating terminal and transfer facilities, training personnel and generally paving the way for a completely equipped air-rail service, the cause of transport would be improved. Linking together all communications within the boundaries of the United States would result in uniting all the communities within the country with benefit to the entire population.

In Africa, Asia, Latin America, and Australia, where transportation, before the coming of air carriers, was not as highly developed as in Europe and in the United States, the transport plane has revolutionized traffic. Air communications are opening up enormous areas for an entirely new technical civilization and for markets which promise considerable growth. The interior of Brazil, the 4,000 mile long Amazon basin, and the mountainous uplands in which its tributaries rise, formerly almost unreachable, are now easily accessible by airplane. In some countries a flight

of less than a day can be substituted for a long and arduous surface journey consuming many days. In China, Colombia, Alaska and New Guinea, flights which take less than a single daylight span replace land journeys of from two to seven weeks.

Political, Social and Military Aspects

Speed of transportation is important not only in the realm of trade and commerce, but in politics, social, and military affairs. In Europe, air lines first established mainly between the various

Fig. 6. Clipper Eclipse just after landing at Shannon Airport, Eire.
(Photo by J. W. Coulter)

national capitals, facilitated the transportation of diplomatic personnel and correspondence. The Fascist policy in Italy was to create air highways for exactly the same purpose as the Roman roads were built, to facilitate communications of a political nature. Air transport is speeding up the development of political self-assertion of dependent peoples in Asia and Africa.

Air travel has introduced a speed factor into war in that planes which can reach the enemy the quickest give their side a great advantage. French lines operating thruout Europe, across the Mediterranean to Africa and in South America, by connecting with steamship service between French Africa and Brazil, were designed primarily to maintain a great reserve force for the French defensive establishments. Air war is far more rapid in its tempo than the fighting known in other wars when mule carts, trains

and auto-trucks were the most important means of transportation. Time has been sharply reduced from years and months to days and hours when modern air power is utilized in military operations. Army aviation at the beginning of World War Two abruptly emerged from its preliminary stages where it served as either the arm of Intelligence, or as a protective barrage, and developed rapidly into flying artillery, as used in Spain and Poland, and in other theaters of operation as the spear-head of attack by mechanized ground forces. Enemy planes can appear, attack, and be out of sight in less than a minute.

Military air power presents some of the more pressing and inescapable problems of modern state craft. It has changed the political relationships between states so as to put the peacefully inclined and the militarily careless at a great disadvantage in a war of survival. There are no longer conventional fronts where air war is involved. The security both of distance and buffer states has gone since air attack can come thru the stratosphere without regard to intervening neutral or belligerent territory. Russia is making a strong bid for the world's military air power. In its 1948 program it plans to have more personnel at work on guided missles and long range aircraft than the United States and Great Britain combined. Air power has made the social problems of war itself highly urgent. Concentrated on cities, as it will be in the future, air war results in a high degree of social disintegration regardless of its outcome in terms of victory or defeat.

Notwithstanding the great changes which air transport is bringing about on land, trans-oceanic air routes are more dramatic. With the length of non-stop stages far beyond anything in comparison to similar transport over land, the airplane engaged in transport above an ocean has every opportunity to demonstrate its great speed to the fullest advantage. The trans-Pacific service of Pan American Airways from San Francisco to China via Honolulu, Midway Islands, Wake, Guam and Manila, 8000 miles, is by far the longest over-water airways path in the world. It has made possible the movement of mail, passengers and express across the Pacific in four days as against the weeks which were required by steamships. The north-Atlantic air route, however, is the most important over-water path, for it connects two parts of the world beween which trade and commerce have been most largely developed. In 1946 on the north-Atlantic route ten airplane com-

panies representing eight nations made an average of eight daily round trip schedules between North America and Europe. The three United States lines flying the Atlantic link the United States by air with the principal centers of Europe, North Africa, the Middle-East and India. The trans-Atlantic route crosses an ocean between millions who speak the same language and between whom, therefore, travel is encouraged. It links two great English-speaking democracies.

REFERENCES

Aircraft Year Book, 1947.
Aviation, Civil, Encyclopaedia Britannica, vol. 2, 1946.
Jackson, Rupert, Growing Gander, *Collier's*, May 3, 1947, p. 92.

POSTAGE STAMPS AS VISUAL AID MATERIAL IN THE TEACHING OF GEOGRAPHY

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Now that geography is finding itself more and more in the curricula of colleges and high schools the inevitable question of and desire for visual aid materials becomes apparent. Some of our better textbooks can be difficult in subtle ways and tho many of our geographical magazines are pictorial, few of them are read in their entirety by non-college students for the factual information they contain.

The teacher of geography is, therefore, confronted with the problem of (1) trying to acquire suitable visual aid materials thru the institution where he works, and (2) stimulating students to find their own materials. In the former problem the customary "red tape" of filling out order blanks and passing them on to be approved and then sending them to the supply houses, takes so long in some cases for the requisitioned material to reach the classroom that lesson plans usually have to be revised thus aborting a fine pedagogical opportunity. It is with the latter problem that this report specifically treats.

Ever since the United States government adopted the adhesive postage stamp in 1847, a wealth of teaching material on Americana has been made available. Attention is called to the Parcel Post Issue of stamps of 1912-13. This is a series consisting of twelve stamps of the following denominations and descriptions: one-cent

stamp shows a postal employee sorting mail; two-cent stamp shows a mail carrier delivering mail; three-cent, a railway postal clerk receiving mail while the train is in motion; four-cent, a rural mail carrier. This is a horse-drawn wagon resembling the milk delivery wagon of a decade or two ago. A mail train is pictured on the five-cent stamp; a steamship and mail tender on the ten-cent; an automobile delivery truck (year of 1912) on the fifteen-cent; an airplane, a slight improvement over the original Wright Brothers plane, is on the twenty-cent; and a view of a manufacturing plant on the twenty-five cent. The three remaining stamps in this series are agricultural in picture, the fifty-cent stamp showing some fine dairy cows; the seventy-five-cent showing a harvesting machine at work; and the one-dollar stamp showing men on ladders picking fruit from fruit trees. The use of the last four stamps would admirably illustrate a phase of America's economic activity.

The Lindbergh air mail stamp of 1927 not only shows a picture of the famous "Spirit of St. Louis" but in the background the northeastern coast of North America and the northwestern coast of Europe are shown with a dotted line indicating Lindbergh's route from New York to Paris.

A view of a canal on the Ohio River with surrounding scenery has been pictured on the *Ohio River Canalization* commemorative stamp of 1929.

A beautiful white and blue stamp showing the western hemisphere and (in dotted lines) the various global expeditions of Admiral Richard E. Byrd is pictured on the Little America stamp, titled, *Byrd Antarctic Expedition II.* This stamp was issued in 1933 and is getting to be somewhat of a collector's item.

The seventh heaven of delight for the teacher of geography in planning a unit on mountains can be found in the *National Parks* issue of 1934. The following is a description of the ten stamps in this series: one-cent shows a view of Yosemite National Park and the famous El Capitan; the two-cent is a view of the Grand Canyon showing the temples of Deva, Brahma, and Zoroaster, and Bright Angel Canyon; Mount Rainier and Mirror Lake are pictured on the three-cent stamp; a view of the "Cliff Palace" ruins of the prehistoric cliff dwellers, is shown on the four-cent Mesa Verde stamp; "Old Faithful" geyser is erupting on the five-cent Yellowstone Park stamp. Crater Lake and Wizard Island are shown on the six-cent stamp; the rocky promontory, Great Head of Acadia

National Park, is on the seven-cent stamp. The "Great White Throne" of Zion National Park; Mt. Rockwell of Glacier National Park; and Mt. LeConte of the Great Smoky Mountains are on the eight, nine, and ten-cent stamps respectively.

The picture of Boulder Dam has been placed on a three-cent stamp issued in 1935 commemorating the completion of that dam.

The *Territorial Series,* issued in 1937, is a set of four three-cent stamps showing the following: a picture of King Kamehameha I. (who placed the Hawaiian Islands under a single sovereignty); Mt. McKinley and the development of Alaska; the Governor's Palace of Puerto Rico known as "La Fortaleza"; and a view of the city of Charlotte Amalie of the United States Virgin Islands.

In 1939 a commemorative stamp was issued on the occasion of the twenty-fifth anniversary of the opening of the Panama Canal. The completion of the first transcontinental railroad in America has been pictured on a stamp issued in 1944. Also in the same year the one-hundred twenty-fifth anniversary of the sailing of the steamship *Savannah,* the first steam-propelled vessel to cross the Atlantic, has been honored with a suitable stamp.

In commemoration of the final resistence of the United States and Philippine defenders on Corregidor, a picture of the island has been reproduced on a stamp, issued in 1944. A unit on transportation in addition to the above-mentioned postal issues, could also include the French stamp showing the liner *Normandie* and Russian, Japanese, and Djibouti stamps showing railroad locomotives.

One of the finest sets of stamps picturing geographical exploration is the Spanish issue commemorating the voyage of Columbus to the New World. The outstanding features of this set are the large triangularly-shaped stamps showing the *Nina, Pinta,* and *Santa Maria.*

Maps of various countries have been pictured on many stamps and the following are some good examples: a map of South America is on an Argentina stamp, issued in 1937; a map of Bolivia is on a Bolivian stamp of 1935; a relief map of Brazil is on a stamp of that country issued in 1940; the isle of Cuba is pictured on a Cuban stamp of 1940; the Dominican Republic, in 1938, issued a stamp showing the map of the western hemisphere; and Liberia has featured the map of Africa on a stamp issued in 1928.

Scenes from great cities of the world are shown on stamps. Some interesting examples are: the Harbor of Antwerp on a Belgian stamp of 1929; Buildings of Parliament at Ottawa on a Canadian stamp of 1933; the Eiffel Tower on a French stamp of 1939; and the *Graf Zeppelin Issue* of Italy of 1933. The stamps of the latter issue show the dirigible flying over a stadium, castle, and bridge of St. Angelo, the Roman Forum, etc.

The above examples are but a sampling of the wealth of material that can be had from postage stamps. Tho this article in no way tries to lobby for a hobby yet many persons have collections valued up to $10,000 and $100,000. Under the administration of the late Franklin D. Roosevelt, he himself, an avid philatelist, many interesting stamps were issued of not only a geographical nature, but an historical one as well. The complete list and description of the many issues can be found in *A Description of United States Postage Stamps 1847-1947.**

Thus the teacher of geography has at his command a wealth of subject matter and visual aid material to supplement practically any phase of geography that he may be called upon to teach. *Scott's Annual Stamp Catalogue* and monthly stamp magazines are available to consult for information on the latest stamp issues.

* Post Office Department, Washington.

THE NATIONAL COUNCIL AT WORK

High Points of Elementary Education Conference

Dr. Norman Carls, Coordinator for the National Council in Washington, D.C., attended the Conference of Leaders in Elementary Education held in Washington, D.C., May 20-22, 1948. National Council members interested in the results of this conference should write to Office of Education, Federal Security Agency, for Report of Second Conference of Leaders in Elementary Education.

The following points prepared by Dr. Carls either have direct bearing on the work of the National Council or suggest additional activities which we might undertake:

1. It was emphasized in several discussions that representatives of the various national organizations occasionally have been invited to actively participate in planning educational programs at the local level (and at state level), and that this practice should become far more common than at present.

2. Underlying the whole conference was the expressed need for harmonizing the objectives and efforts of the "child development specialists" with the objectives and efforts of the "subject matter specialists." This was suggested as a topic for special treatment in the next annual conference.

3. Organizations were commended for cooperative efforts. This of course includes our various activities undertaken cooperatively with the National Council for the Social Studies. It might be recommended that our National Council give full consideration to methods of working cooperatively with organizations primarily concerned with "child development."

4. Heavy emphasis was placed on education closely related to the life of the community. In this connection it was emphasized that local groups of teachers must make inventories of community educational resources.

5. Education of elementary school children in out-of-school hours was an important interest of nearly every delegate at the conference. Need was expressed for educational guidance made available to non-school organizations interested in the out-of-school activities of children, such as the Boy Scout organization.

Lists and Bibliographies on Motion Pictures for Geography

Members of the committee are: Miss Thelma Waddle, Board of Education, Pittsburgh, Pennsylvania, Chairman; Dr. E. E. Hall, Mississippi Southern College, Hattiesburg, Mississippi, Secretary; and Miss Lavina H. Henderson, 711 Chautauqua Street, Pittsburgh, Pennsylvania.

Geography in the High School

Miss Melvina Svec, Chairman of the Publications Committee, is highly pleased with the rapid progress being made on the volume—*Geography in the High School*. Watch for an announcement concerning its publication by McKnight and McKnight. *Geography in the High School* will contain a mine of information and is the second volume to be added to the Geographic Education Series since the Second World War started. During the war, *Map Reading* by Elaine Forsyth was added to this series. For details concerning the Geographic Education Series, see full page advertisement in the September Journal of Geography.

Nominating Committee

The following people constitute our Nominating Committee: Dr. Katheryne Thomas Whittemore, State Teachers College, Buffalo, Chairman; Dr. George J. Miller, Indiana University; and Dr. Zoe Thralls, University of Pittsburgh.

Thomas F. Barton, *President*

EDITORIAL NOTES AND NEWS

The joint meeting of the Association of American Geographers and the American Society for Professional Geographers will be held at the University of Wisconsin, December 27-30, 1948. The Lorraine Hotel will be headquarters. Room reservations should be made at an early date. Meetings will be held in the Student Union Building where arrangements have also been made for either cafeteria or buffet service, breakfast and luncheons. Abundant space has been provided for exhibit purposes in the large lounge room and along the hallway connecting the lounge room with the auditorium in the Student Union Building. Invitation is extended for exhibits by commercial companies, government agencies, educational institutes, and others who might have exhibits of professional interest. All exhibit material should be dispatched, well in advance, to Dr. Arch C. Gerlach, Science Hall, University of Wisconsin, Madison 6, Wisconsin. These exhibits should be marked clearly for attention of the Exhibitor.

We are frequently asked concerning films suitable for economic geography. We, therefore, want to take this opportunity to repeat that many excellent films are available from the United States Bureau of Mines. For example, two recent films are entitled The Story of Gasoline, and California and Its Natural Resources. For detailed information on how to obtain these films address Geographic Services Section, U. S. Bureau of Mines, 4800 Forbes Street, Pittsburgh 13, Pennsylvania.

Other excellent films may be obtained from The Motion Picture Service, Office of Information, U. S. Department of Agriculture, Washington, D. C. Among the many available are the following titles: Erosion; Soil and Water Conservation; Top Soil; Water; Then It Happened. The title of the last named does not give very much information concerning the character of the film. However, it deals with the very destructive forest fire in the state of Maine.

Tanganyika is to have a pipe line extending 150 miles inland. It will extend from Mtwara to the new Ground Nuts Area being developed by the British Government. The line will carry gasoline and gas oil for use in agricultural implements, bulldozers, and transportation vehicles. It will have a capacity of between 120,000 and 180,000 tons annually. Approximately 25 miles have been completed. Port facilities will also have to be built.

The Canadian Government has officially established the "Canadian Board on Geographical Names." This new board takes the place of the former "Geographical Board of Canada." The Secretary of the new board is Mr. L. B. Skinner, Canadian Board on Geographical Names, Department of Mines and Resources, Ottawa, Canada. It is interesting to note that "The Board shall decide on questions of geographical nomenclature affecting Canada, and all questions which arise in the Departments of the public service respecting Canadian and foreign geographical names shall be referred to the said Board."

It is anticipated that Liberia will assume increased importance as a source of raw materials now that the U. S. Navy has made Monrovia a modern port. Twenty millions is reported spent on this development. Rubber shipments out of this port will probably total 30,000 tons this year, produced on the Firestone rubber plantation at Harbel, Liberia. But there is more than rubber in Liberia. One company—the Liberia Company—has been granted an eighty-year concession to explore Liberia's natural resources. This company is backed by a group headed by the well-known former steel executive, Edward R. Stettinius, Jr. Shipping companies are alerted to the anticipated U. S.-African trade

and are not only interested in trans-Atlantic shipping but in small-draft craft for coast-wise and inland pickups which can be reassembled at a port like Monrovia. That the world learned a lot about Africa in the last war is increasingly evident. Indicative of this awakened interest are the power developments the British are making in South Africa, the huge soybean plantations being developed there, and the possible finding of radioactive minerals near the gold mines of Johannesburg similar to those of the Belgian Congo which were the source of much of the uranium ores used by us in the development of the atomic bomb. Naturally the development of these African resources all stimulate increased interest in Liberia.

Brazil has very extensive deposits of monazite in the coastal sands of Bahia and Espiritu Santo and in the Rio Doce Valley. Monazite is a complex mineral from which a number of valuable products can be derived, each essential in a variety of industrial processes. Monazite is getting added attention these days because it contains thorium so significant in the rapidly expanding field of atomic fission. Brazil is now in a position to further research in the use of thorium since the arrival of a very powerful betatron at the nuclear energy research institute in Sao Paulo. The research will be under the direction of the University of Sao Paulo. The Rockefeller Foundation is reported to have contributed one and a half million dollars toward the research program.

Globes are assuming more and more significance as an aid to visualizing world-wide news as related to routes. One such route is that from New York to the Lagens airport on one of the Azores where the United States has military base rights. This base is about 2,400 miles east and a little south of New York. It is almost equally far from this base to the air base near Tripoli in North Africa, recently reopened by the United States. Another news item which gets added meaning when viewed on the globe is the arc along which the May solar eclipse is visible, weather permitting. This path extends some five thousand miles from Burma to the Aleutians. Due to the International Date Line cutting across this arc, the eclipse will be dated May 9, in Burma, Siam, China, Korea, and Japan, but it will be May 8 in the Aleutians.

Dr. Karl Ver Steeg, Chairman of the Department of Geology and Geography of the College of Wooster, Wooster, Ohio, was honored for his many years of service to the College, at Wooster, May 7 to 9. Included in the celebration is a program, under the direction of Dr. Paul Shafer of the University of Illinois, which will deal with the place of geology and geography in the liberal arts college. Another program, arranged by Dr. H. T. U. Smith of the University of Kansas, will present research papers contributed by former students of Dr. Steeg. The dinner program will feature congratulatory messages from professional colleagues, institutions, and widely-scattered former students.

One of the interesting and fascinating developments in the oil industry is the search for petroleum on the continental shelf. Roughly the entire continental shelf of the United States contains approximately 84,500,000 acres. Much of it is potential oil area. Approximately 3,300,000 acres have already been leased along the coast of Texas, Louisiana and Florida. Some of the claims along the coast of Louisiana and Texas extend thirty-one or more miles from the coast line. These efforts to find oil on the continental shelf are proceeding at a very rapid pace. Last June more than twenty drilling locations were in various stages of development. Only a few have thus far

produced oil but many salt domes have been located definitely. Geophysical exploration is being carried out extensively along the whole Gulf Coast of the United States.

The Ohio Council of Geography Teachers held a meeting in Barberton, Ohio, in May. Featured on the program was a report on the ceramics industry of Sebring, Ohio, by Joy Stover; a paper on the grade levels of geography in the elementary grades, by Evelyn Weston; and a paper on Inhuman Geography, by Dr. H. F. Raup of Kent State University. Dr. Raup was re-elected president of the Council; Mr. Lyle Fletcher of Bowling Green State University was elected vice-president, and Villa Smith of Cleveland was elected secretary-treasurer. The afternoon was devoted to a field inspection of the industry complex of Barberton, under the direction of Walter Crewson, superintendent of schools in Barberton.

It is reported that about 17,000 barrels of crude petroleum will be delivered daily to a refinery in New Jersey from Saudi Arabia, Iran, and Kuwait. During 1949 this will be gradually stepped up to 40,000 barrels. Saudi Arabian crude has been coming here since July, 1947, when the first trial run was made. Since it requires about thirty days for a tanker on the Persian Gulf to get loaded, cross to America, and then unloaded, it is apparent that the oil companies expect the unprecedented demand for oil to continue. The significance of oil in the Middle East is brought out in recent reports which indicate that Kuwait's daily production of petroleum is soon expected to reach 400,000 barrels; that of Saudi Arabia, 300,000 barrels; and that of Bahrein Island, 28,000 barrels. Qatar, too, is in the limelight as well are being opened in that independent shiekdom on the Persian Gulf. Refined products made in the United States from Middle East crude will be marketed in New York, New England, and the Middle Atlantic states.

The Antofagasta-Salta railroad which was opened officially in 1948, was envisioned in 1905. Work on it started in 1921. It is a meter-gauge railway. The roadbed thru Argentina is reported to be 571 Kilometers long, and that thru Chile is 330 miles long.

The United States imports of spices in 1947 totaled $27.5 million. Black pepper headed the list of 31 varieties of spices and was valued at $13 million. Whole mustard seed ranked second in value.

The California Council of Geography Teachers, affiliate of the National Council of Geography Teachers, last spring initiated the publication of a *Geography News Letter*, edited by Lauren C. Post, Los Angeles City College. Mr. Post is Secretary-Treasurer of the Council, while Walter Hacker, San Francisco State College is President, and Arthur Carthew, Los Angeles City College is Vice-president. The publication featured news pertaining to course offerings in geography, student enrollment, and staff personnel during the last spring quarter; and also the offerings for the past summer. One of these summer offerings of unusual interest was the course entitled, Air-Age Geographic and Geologic Field Studies offered by V. Calvon McKim of Fresno State College. Airplanes and boats were scheduled to convey the students to the centers to be studied. The second annual meeting of the Council was scheduled to be held June 26, at the University of California.

The twenty-third Annual Meeting of The New England Geographical Conference was held at Wellesley College, Wellesley, Massachusetts on May 8, 1948. The morning program was devoted to a symposium on Focus on the Orient. The papers presented were: "Water Transportation and the Food Supply of Shanghai," Rhoads Murphy, Harvard Graduate School; "Land Utilization in Formosa," Ross Machay, McGill University and "Some Land Use and Tenure Problems in Sumatra," Karl J. Pelzer, Yale University. In the afternoon two sectional meetings were held on the discussion topic "Movies in Teaching Geography." Ada M. Shawkey, Graduate School, Clark University served as discussion leader for the Primary and Secondary Level section and Minnie E. Lemaire, Mt. Holyoke College was discussion leader for the College Level section. Films were shown before the discussions.

GEOGRAPHICAL PUBLICATIONS

Sidman P. Poole, Thomas F. Barton, and Clara Belle Baker. **Geography Foundation Series—Through the Day.** 124 pp. **$1.28, From Season to Season.** 156 pp. **$1.44, In Country and City.** 218 pp. **$1.96.** Bobbs-Merrill Company, New York. **1947.**

This *Geography Foundation Series* will receive a hearty welcome from numerous primary teachers who have been seriously inquiring about what they can do to prepare children for geography in the intermediate grades.

These books are attractive and usable. They are printed on good quality paper in clear type, and are well bound and of convenient size. They are well illustrated—first two books in colors—while the third grade book has black and white halftones as well as some pictures in colors. Each short unit of material is followed by a few questions and the grade book has several pages entitled "Your Work Page."

The textual material is well written and carefully graded. Provision is made for establishing concepts thru repetition in two or more of the books. This is in good keeping with interests of small children and effective teaching.

That critical editing was done is evidenced by the fact that in the three books one might question less than a half dozen statements, e.g., in the third grade book—*In Country and City,* "deep clay" probably a misprint; p. 57 "put out some pumpkins" is ambiguous; p. 155 "They are made from the *sap* of a tree called the rubber tree."

Not only will primary teachers appreciate having this "tailor made" material, but intermediate teachers will be pleased to have children bring to the study of geography a much better background which would enable them to enjoy the study of geography. A concept chart as well as a manual is furnished to teachers using these books.

ANNA C. LARSON

State Teachers College, St. Cloud, Minnesota

Report of The China-United States Agricultural Mission. 265 pp. Office of Foreign Agricultural Relations, U.S.D.A., Washington, D.C. May, **1947.**

This report was prepared by a joint commission dealing with the agricultural situation in China. Ten experts from the United States joined with a similar group of Chinese experts for the study of the country's agricultural production and potential. The commission traveled thruout the fourteen provinces of China. The commission seems to be somewhat optimistic concerning the possibility of increasing the agricultural output of China. The volume describes present production and suggests methods for improvement of agriculture. From the field observations the commission, "is fully convinced that agricultural production in China can be greatly increased by the application of modern

scientific knowledge to the improvement of soils, crops, livestock, and farm equipment. It also believes that the income of farmers can be greatly enhanced and the present poverty of many rural communities reduced by improvements in land tenancy, farm credit, and agricultural marketing." Geographers will regret the lack of any apparent comprehensive view of a given area. However, secondary and college teachers will find a large amount of material of great value in their work on China.

J. W. Diffor and M. F. Horkheimer. **Educators Guide to Free Films.** 345 pp. Educators Progress Service, Randolph, Wisconsin. 1948. $5.00.

The *Educators Guide to Free Films* is an excellent source of information concerning films that may be obtained at little or no cost. In nearly all cases transportation charges must be paid by the school, but there is no charge for the use of the film. The new volume lists 1632 films, 29 per cent of which are new to this edition. It also lists 242 slide films. The volume is conveniently arranged by subject index, cross index, title index, source index, and can become easily usable by any teacher. The annotation describes the character of each film indicating clearly its usefulness for teaching purposes.

Lili Heimers. **Free Teaching Aids In 14 Subjects.** 53 pp. New Jersey State Teachers College, Upper Montclair, New Jersey. 1948. $1.00.

As the title indicates this publication, in mimeographed form, covers a great variety of subjects. It is arranged in convenient form by topics so that reference material, for example, on agriculture may be readily located. A brief annotation indicates the probable value of the publication. The low charge for this publication indicates that it has been gotten out as a contribution to education. It must be noted that the one dollar charge must be sent with your order, as the college cannot keep accounts and serve you at such a low cost.

J. G. Fowlkes and D. A. Morgan. **Elementary Teachers Guide to Free Curriculum Materials.** 208 pp. Educators Progress Service, Randolph, Wisconsin. 1948. $4.50.

The volume *Elementary Teachers Guide to Free Curriculum Materials* is by far the best publication of this type that has come to our attention. This volume, like the one on films, will be just as useful to secondary school teachers as it will to elementary teachers. The guide contains 1338 titles, 46 per cent of which are new in this edition of the volume. Different colored paper is used to emphasize the major divisions of the guide. Blue paper is used to give full information on each item by area and constitutes the major part of the volume. The yellow paper is used to show teacher resource material. This material may not be directly usable by the students, but will furnish highly valuable information to the teacher. Pink paper is used to show the title index and white paper is used to show the source index. An annotation is provided for each item. This gives the reader a concise statement of the value of the material offered. A great amount of highly valuable material may be accumulated by any school free of charge by making a careful selection from this volume.

Through China's Gateway, A series of five filmstrips: One, In the Chinese Manner; Two, China's Children; Three, Food for China; Four, A Nation of Scholars; Five, China's Tomorrow. Presented by The East and West Association, Commentaries by Pearl S. Buck. Available through Visual Workshop, Inc., 13 E. 37th St., New York 16, $12.50 per set. $2.50 each.

Film Strips are visual aids well suited to geographic instruction. They have the advantage of being easily handled and are relatively inexpensive. A teacher may spend as long or as short a time as he may wish on a single frame. Listed above are a set of five film strips on China which are well prepared for geographic teaching at all levels. Especially worthwhile are two: In the Chinese Manner and Food for China. These film strips were initially arranged by The East and West Association as a part of its educational program. Commentaries written by Pearl Buck accompany the set and may be used to advantage. Recordings of the commentary are available but are hardly necessary for class room use. The pictures are well chosen. They are well varied with beautiful landscapes and human-interest close-ups. They show China's best side, but that is to be expected. Some mistakes are made which geographers can quickly correct, for example the two supposed examples of "brown" North China are from South China. Two or three maps could have been inserted with telling effect. The commentary is written in simple flowing style that adds much, particularly for knitting the material together. Occasionally the comments are a little coy and gloss over painful realities. Each commentary booklet includes suggested discussion topics and reading lists. All in all the series are a very valued teaching aid. Geography teachers will welcome these film strips to aid them in giving their students some knowledge of China. After using them they will look for more series on other countries.

SHANNON MCCUNE

Colgate University

H. H. Neuberger, F. B. Stephens. **Weather and Man.** Prentice-Hall, Inc. N.Y., 1948, 272 pages, $3.75.

T. A. Blair. **Weather Elements.** Third Edition, Prentice-Hall, Inc. N.Y., 1948, 373 pages, $5.65.

Weather and Man is a fairly non-technical discussion of, What is weather? and Why do we care? The chapters of the first part discuss atmospheric properties and processes, including air masses, circulation, forecasting. In Part II are some influences of the weather upon eight conditions or activities: health, agriculture, architecture, aviation, transportation, public utilities, the housewife, and business and industry. The discussions, while brief, are reliable and interesting. This book merits a place in supplementary reading for teachers of geography and for interested high school and college students.

The third edition of Blair's *Weather Elements* differs from the second, 1942 edition, chiefly in the addition of chapters on the characteristics of air masses and fronts, the relation of weather to aviation. Revisions have been made in the chapter on forecasting, giving increased attention to high altitude observations, partly by radar. Unfortunately, the price, already high, has been made almost excessive. Only fifty pages, of rather large type is devoted to climate.

STEPHEN S. VISHER

Indiana University

S. F. Nadel. **The Nuba.** 525 pp. Oxford University Press, New York. 1947. $11.00.

A detailed and primarily anthropological study of several very primitive, small groups of Africans who live in the Nuba Mountains, Anglo-Egyptian Sudan. Their habitat includes 30,000 square miles of steep-sided plateau and intervening plain, in one of the most remote parts of Black Africa. The study brings to the geographer an intimate view of how these people occupy their land, the mode varying with the charac-

ter of the habitat and the stage of culture. Modifications of indigenous life as the groups have come into contact, first with Arabs, and latterly with British authority, demonstrate that the most inaccessible fastnesses of Africa are being fundamentally altered by outside contacts. This may startle those teachers of geography who fancy that African society is static.

Useful explanations are given of distinctive cultural practices (such as the paradox of unused cattle being maintained while their owners go hungry) that must be understood if African geography is to be properly studied.

Chapters 1-3 are exceptionally valuable to the geographer, but they are incomplete without the opening sections of later chapters that deal with location and site of the settlements and the fields. Chapter 12 summarizes the anthropology, but the geographer must make his own estimate of the geographic "trends and prospects."

DERWENT WHITTLESEY

Harvard University
May, 1948

Paul R. Hanna and Joseph E. Williams, **Global Geography: A Workbook in World Geography.** 35 lessons and 8 die-cut Supplementaries. 95 pages. Scott Foresman and Company, Chicago, 1948. For use with Grades 7 to 12. Single sets (Workbook and 8 Supplementaries) $2.40 per set; a carton of ten sets $20.00.

Global Geography: a Workbook in World Geography, consists of 35 laboratory exercises, designed to give the student an understanding of the nature and use of the globe and of various kinds of projections, by guiding him in the construction and study of the globe. The exercises are given in easy to follow directions, and deal with such subjects as: Projections, Distribution of Continents and Islands, Oceans, Seas, Gulfs and Bays, Rivers, Lakes and Inlands Seas, The Atmosphere, Climate, Natural Vegetation, Population, Resources, and Transportation, including Global Airways. Several Review Exercises are included. The exercises may be used with any textbook.

The new feature about the Workbook is the set of 8 die-cut Supplementary materials which accompanies each book. It is this equipment that makes it possible for each student to learn his geography in a laboratory situation, using cartography as a method of instruction.

By means of the Supplementary materials, *Global Geography* is designed to teach world geography as an active influence in the lives of people everywhere conditioning the way they live and to show their dependence upon each other. The Workbook lessons teach students to place on the hemisphere maps, the significant items which constitute world social, economic and political realities. It proves training in the use of globes and maps, as basic information in building understanding of the air world today.

While the Workbook is designed for use in Grades 7 to 12, it can be used profitably in such courses as Principles of Geography offered on the college level.

INA CULLOM ROBERTSON

State Teachers College, Valley City, North Dakota

J. Russell Smith and Frank E. Sorenson. **Our Neighbors at Home.** 250 pp., and **Neighbors Around the World.** 250 pp. The John C. Winston Company, Philadelphia. 1947.

In the first book, the various type communities pictured and described are about the farms and industries usually considered at third grade level. The stories of these communities are generalized.

In the second book, the various journeys and stories cover the usual fourth grade topics on the polar areas and then move equatorward over the various regions in sequence. A series of maps shows the location of the areas under discussion.

To be commended is the completeness of telling the seasonal story on the farm and other communities. The stories are interestingly told and the vocabulary appears well suited to the grade level. Another feature is the definition use of words and terms the first time they appear in the text. The index is combined with a glossary and pronunciations. The index will serve little use since thirty to forty pages are listed for some single topics. Most units close with an explanation of how goods are sold for money so that people can buy the things they do not make. Three kinds of exercises close each unit.

Both books make generous use of photographs and colored pictures. The second book adds sketches which lack scale and proportion. Both the colors and grotesque features of people detract from the first book. Some pictures lack captions or means of identification. Some captions are irrelevant and inaccurate, e.g.: "Why do ranchers send cattle and hogs to the Corn Belt to be fattened?" and "Crop rotation is practiced in each contour."

In an attempt to popularize content, a number of errors occur in the text. Development of details is not equally complete. Nothing is said about the height of hay yet the sentence reads, "After the cut grass has dried for several hours in the sun, we call it hay." The illustrations of our cotton belt show mules but the text tells only of horses and tractors.

Some strange mental images will probably result from such statements as:

"Millet is a kind of grain somewhat like oats."

"The caterpillar tractor has big feet."

"The builders of Coaltown have learned how to make very nice houses on these long narrow lots." (The colored picture contradicts this statement.)

". . . to clean a codfish . . . cut off the head. Next split open the fish. Then put it in a barrel and cover it with salt."

Attempts at being facetious are to be deplored. In a sketch showing a street scene, one sign reads: DR. PAYNE, Dentist. The rather common practice of having a hen hatch duck eggs is told as a "joke" on the hen.

Much emphasis is placed upon farmers sharing equipment and working back and forth on each other's farms. While this may be true to some degree, it happens in most every story. Children who are familiar with the home region will probably be critical of some of the parts telling about their type of community. However, they will be delighted with reading about the things in a community that is much like their own, and some will find an opportunity to make changes and additions in the book stories.

M. Melvina Svec

State Teachers College
Oswego, New York

Ralph H. Brown. **Historical Geography of the United States.** Harcourt, Brace and Co., New York, 1948. 596 pages, 147 illustrations and maps.

This excellent book is the last publication of an eminent geographer whose untimely death precludes further contributions which have always been welcome additions to geographic literature.

Historical Geography of the United States deals with the development of our country from the colonization period to the present. Particular attention is paid to the progressive economic changes which various regions have undergone, the bases on which industries of the past were built, the types of settlements and frontiers, and the

expansion of our nation from ocean to ocean. Dr. Brown describes conditions in the early English, French and Spanish settlements and then presents a view of the Atlantic seaboard and South in the first years of the Republic. Next he extends his study into the Ohio Valley and lower Great Lakes region to 1830. A section on the New Northwest describes the fur trade, mining industries and forest exploitations in upper Michigan, Wisconsin and Minnesota. Then follows the story of the Great Plains and Rocky Mountains with considerations of the trappers and buffalo hunters, the cattle empire the farming frontier and the mining development. The final part of the book discusses the Pacific Northwest, the Great Basin and California and the problems of their settlement and utilization of their resources.

The book is interestingly written and represents wide reading and scholarly analysis of source materials. There are many reproductions of old maps and contemporary drawings. The bibliography and index are usable and adequate. *Historical Geography of the United States* is both a useful textbook and valuable reference work. The reviewer finds much to praise and little to criticize except he wishes that more mention had been made of the geographic factors affecting routes of travel, locations of settlements and expansion of industries. The what, where and when of things are well treated but some students will regret that the explanations of the why of things sometimes seem inadequate.

OTIS W. FREEMAN

Specialist for Geography in Higher Education
Office of Education

NEW PUBLICATIONS

Calendario Atlante De Agostini. 499 pp. and separate maps. Institute Geografico De Agostini, Novara, Italy. 1948.

A compilation of statistical data along with 29 separate political maps and color reproductions of the flags of the nations.

Samuel Guy Inman and C. E. Castaneda. **A History of Latin America for Schools.** 442 pp. Illustrated. The Macmillan Co., N.Y. 1944. $2.20.

Part I gives a preview of the social, racial, and geopolitical backgrounds of the Latin Americans. Part II surveys the early Indian cultures, the Colonial period, and the contributions made by various leaders and their followers in setting up an independent government for each republic. Part III analyzes the steps that lead to international developments. Part IV summarizes outstanding contributions made by Latin Americans to literature, art, and music. The appendix lists the outstanding events in Latin American history in chronological order and provides a list of source materials.

The United Nations. Department of State Publication 2885, United States—United Nations Information Series 22.

The United Nations for Peace and World Progress is a chart prepared by the State Department to show the general organization of the United Nations and how it functions. It should be of real aid in social studies classes. A copy may be obtained from the Group Relations Section, Division of Public Liaison, Department of State, Washington, D.C.

The Ports of Los Angeles and Long Beach, California. Port Series No. 28. Superintendent of Documents, Washington 25, D.C. 1947.

This is a new volume revised in 1946, of the long series of highly valuable reports on harbors of our country. It contains a vast amount of information for geography teachers, especially at the college and secondary level.

Richard Foster Flint. **Glacial Geology and the Pleistocene Epoch.** 589 pp. Illustrated. John Wiley & Sons, N.Y. 1947. $6.00.

The volume deals particularly with the major facts of the Pleistocene Epoch. An effort is made to bring out the outstanding characteristics of the epoch and its glacial history. Geographers will probably be particularly interested in the effort of the author to reconstruct the history of the glacial epoch.

C. A. Cotton. **Geomorphology.** 505 pp. Illustrated. John Wiley & Sons, N.Y. 1946. $6.00.

The scholarly work of Dr. Gotton of New Zealand is well displayed in the new edition of this volume which is an introduction to the study of land forms.

Henry Morganthau, Jr. **Germany Is Our Problem.** 239 pp. Harper & Bros., N.Y. 1945. $2.00.

All social studies teachers will be interested in this volume. We have heard much about the Morgenthau Plan and this little book sets it forth with clarity.

Wyatt Winton Belcher. **The Economic Rivalry Between St. Louis and Chicago 1850-1880.** 223 pp. Columbia University Press, N.Y. 1947. $3.00.

The period between 1850 and 1880 is covered in this historical volume. The development of river transportation at St. Louis and railroad transportation at Chicago is described and evaluated, as is effects of the Civil War.

H. T. Stearns and G. A. Macdonald. **Geology and Ground-Water Resources of the Island of Hawaii.** Bulletin 9. 363 pp. Illustrated. U. S. Geological Survey, 333 Federal Bldg., Honolulu, Hawaii. 1946.

The geology and geography of the great volcanic area of Hawaii will certainly be appreciated by many geographical readers. The photographs are especially clear and interesting. There is also an extensive use of maps and diagrams.

Henry Dewey Thompson. **Fundamentals of Earth Science.** 450 pp. Illustrated. D. Appleton-Century Co., N.Y. 1947. $3.75.

The volume is intended as a survey of earth science covering one semester. It is designed to give the basic body of information to beginning students who may continue their work in either geography or geology.

Alice Franklin Bryant. **The Sun Was Darkened.** 262 pp. Illustrated. Chapman & Grimes, Boston. 1947. $3.00.

Mrs. Bryant has endeavored to portray conditions as they actually existed in the Philippines, and during a part of the war. Her home was on a large coconut plantation, where she lived long enough to acquire a sympathetic and understanding interest in the people. Readers will find the volume very interesting and quite different than the usual "horror type."

James S. Gregory and D. W. Shave. **The U.S.S.R.** 636 pp. Illustrated. Wiley & Sons, N.Y. $4.25.

This geographical survey of the Soviet Union was first published in 1944 and has been reprinted recently. It is a mine of information on Soviet Russia and will be found highly valuable to all who teach either Europe or Asia.

Edwin J. Foscue. Taxco: **Mexico's Silver City.** 31 pp. Illustrated. University Press, Southern Methodist University, Dallas, Texas. **1947. $1.00.**

This is one of the volumes in the "American Resort Series" and is a fascinating description of the history, location, and geographical features of the city of Taxco, Mexico.

Ralph H. Brown. **Historical Geography of the United States.** 596 pp. Illustrated. Harcourt, Brace & Company, N.Y. **1948.**

The late Professor Brown put an enormous amount of detailed study and years of careful and painstaking research into this volume. To undertake an historical geography of a country the size of the United States is a huge task. Professor Brown deals with the colonization period and then treats the country as a whole by means of regions. The volume will undoubtedly become a standard source of information in all courses dealing with the historical geography of our own country.

Dr. H. J. Keuning. **Het Nederlandsche Vok In Zijn Woongebied.** 536 pp. Illustrated. H. P. Leopolds Uitgevers-Maatschappij N.V., Noordeinde 23, 's-Gravenhage, Netherlands. **1946. $12.50.**

This extensive volume sets forth the problem confronting the Netherlands and deals extensively with the climate, water resources, the cultural landscape, the people, and the industrial development.

Guy Irving Burch and Elmer Pendell. **Human Breeding and Survival.** 138 pp. Penguin Books, Inc. New York. **1947.**

Revised edition Originally published with the title, Population Roads to Peace or War. Challenging statements relative to population limitations.

Morsk Geografisk Tidsskrift. Vol. 7, No. 5-8. **Del Norske Geografiske Selskab,** Olso, Norway.

This volume commemorates the fiftieth anniversary of the founding of the Norwegian Geographical Society which followed Nansen's pioneer expedition across Greenland on skis. The articles, published in English, French, German, or Norwegian, deal principally with research in polar regions, Norway, Yunan, and the Congo.

Alfred M. Leeston. **A World Tour in Oil.** Alfred M. Leeston, Department of Economics, Southern Methodist University, Dallas 5, Texas. **1948.** 35 pp. 50¢.

Dr. Leeston prepared this interesting volume in connection with his work at Southern Methodist University. It is written in simple and interesting style and will be found to be highly useful to teachers at all levels. It discusses the problem of oil around the world.

Gasoline by Synthesis. Standard Oil Company, New Jersey. **1948.** 22 pp. 30 Rockefeller Plaza, New York City 20. Free.

This little pamphlet is one of many highly useful publications gotten out by the Standard Oil Company. It describes the steps involved in providing gasoline from sources other than petroleum. Another very useful pamphlet published by the same company is entitled "Petroleum in the World."